FESHM 5024: SLINGS AND RIGGING HARDWARE

Revision History

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1.0 INTRODUCTION

This chapter covers use, inspection and maintenance of purchased slings and rigging hardware for attaching loads to hoists. Devices that are designed and fabricated for a specialized use are covered in FESHM 5022.

2.0 SCOPE

This chapter applies to all purchased slangs and rigging hardware used at Fermilab.

3.0 DEFINITIONS

There are a number of different definitions associated with slings and rigging hardware. ASME B30.9 Section 9-0.2 Definitions should be consulted for a complete list of related terminology and definitions.

Further definitions and terminology are contained in the standards and/or manuals listed below:

i. ASME B30.9 - Slings
ii. ASME B30.20 – Below-the Hook Lifting Devices
iii. ASME B30.26 – Rigging Hardware
iv. OSHA 1910 and 1926
v. Fermilab ES&H Manual

Rigging Qualified Person – A person, who by possession of a recognized degree or certificate of professional standing in applicable field, or who by extensive knowledge, rigging training and experience has successfully demonstrated the ability to solve or resolve problems related to rigging and associated rigging work.

4.0 RESPONSIBILITIES

The Division/Section Head is responsible for

- Appointing a qualified person(s) to review and maintain the documentation for all slings and rigging hardware within the division/section control that assures compliance with the requirements of this chapter.

The ESH Section Head is responsible for

- Auditing the Division/Section for compliance with this chapter. This may be accomplished through the Tripartite ES&H Assessment process.

The Mechanical Safety Subcommittee is responsible for

- Servings in a consulting capacity on all Below-the-Hook lifting device matters.

5.0 PROGRAM DESCRIPTION

Manufacture

1. Slings and rigging hardware shall be manufactured to comply with the applicable sections of ASME B30.20, ASME B30.26, and ASME B30.9.
2. Identification shall be a part of the manufacturing process.
    a. Each sling shall be marked per B30.9 to show the following:
        i. Name or trademark of manufacturer
        ii. Rated loads for the type of hitch used and the angle upon which it is based
        iii. Diameter or size of sling
    b. Rigging hardware shall be marked per B30.26, including manufacturer's name or trademark, size or rated load. See B30.26 for marking requirements of specific hardware types.
    Note: Hardware labeled with only country of origin does not comply with this standard.

Use

1. All slings and rigging hardware shall be used in accordance with the latest editions of ASME B30.20, ASME B30.26, ASME B30.9, OSHA and the Fermilab ES&H Manual.
2. Slings and rigging hardware that appear to be damaged will not be used for any reason. They are to be destroyed and discarded.
3. All slings shall be assigned unique identifying IDs by the responsible division/section to facilitate sling inspections. All slings shall legibly display the ID as well as the manufacturer's load rating tag or be removed from service. All sling ID information shall be recorded on inspection documents.
4. The rigging qualified person/operator is responsible for ensuring the sling identification is legible and shows the rated capacities for each type of hitch (vertical, basket and choke), prior to each use.
5. Refer to ASME B30.20, ASME B30.26, ASME B30.9 for further information on use and maintenance.

Inspection

1. Inspections and maintenance of inspection records are the responsibility of the division/section responsible for the slings.
2. All slings and rigging hardware are to be visually inspected prior to every use by the operator [29 CFR 1910.184(d)]. Documentation of pre-use inspections is not required.

3. Periodic, documented inspections shall be conducted on all slings and rigging hardware (ASME B30.9 and B30.26) by a qualified person. Inspection forms are provided in the appendix of this chapter. Determination of inspection frequency shall be the responsibility of the division/section responsible for the slings, but such documented inspections shall be conducted at least annually. The frequency of these inspections is to be based on:
   a. frequency of use
   b. severity of service conditions
   c. nature of lifts being made
   d. experience gained on the service life of slings used in similar applications
4. Requirements for pre-use and periodic inspection of slings are contained in ASME B30.9 and 29 CFR 1910.184.
5. When rigging hardware is in a condition that is questioned by the inspector, a conservative disposal policy should be utilized and the item in question destroyed and discarded.
6. On occasion, a particular piece of equipment will come with its own rigging. It is permissible to use this rigging as long as the per use and annual inspection criteria is utilized for this equipment.

Maintenance

Slings and rigging hardware shall be stored in an area where they will not be subjected to mechanical damage, corrosive action, moisture, and extreme temperatures or kinking. Some slings, when stored in extreme temperatures will experience reduced performance. Further consideration should be made with regard to storage and use in extreme conditions.

6.0 FORMS

There are two inspection forms to be used for documenting inspection of slings:

- Web Sling Inspection Form
- Wire Rope Sling Inspection Form

These forms can be found on the ES&H website or the ES&H document management database under FESHM Chapter 5024.